Leica Geosystems' Commitment to Mining

With high brand awareness, a large range of technologies, a large global distribution system and professional technical support that is second to none, Leica Geosystems is one of the world's leading manufacturers of surveying and mapping solutions.

Leica Geosystems' products have been used in the mining industry for decades. Leica Geosystems aspires to be a valuable and reliable business partner to mining companies. This means providing products that enable success, the key to which is productivity – the element where Leica Geosystems' products really deliver.

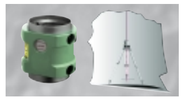
Further elements that support this success are:

- *Leadership in innovation and technology.* The number of Leica firsts reads like a history of the surveying instrument – the world's first opto-mechanical theodolite, infra-red distancer, surveying GPS receiver and digital level – to name but a few. Leica's investment in research and development is continuous, guaranteeing its ability to maintain its position at the forefront.
- *Strategic Partnerships combined with internal know-how.* In areas where we don't specialize, we build strategic partnerships with those that do. In this way you can always be sure of a total solution provided by the best in the industry.
- *First Class Technical Support and Service.* Quick, local and above all knowledgable technical support and service is at your disposal as a customer. Whether your question is about the instrument itself or you simply want to have your instrument serviced, Leica Geosystems' personnel are there for you. Leica Geosystems' staff are continually retrained in order to provide this first class support and service.
- *Reactive to local needs.* Rarely do two areas of the world have exactly the same regulations or survey procedures. Our regional customization centers take this into account, configuring deliveries with respect to onboard software, languages and work practices to suit.

Our products are designed to last. They don't incorporate passing fads or gimmicks but incorporate real advantageous innovations and are designed for a long life of serious hard work. Our customers benefit from the knowledge that the instrument will not be obsolete a few months after it has been purchased. The continuous development of application programs and spare parts availability ensure that they obtain a good return on their investment.

More information is available from your local Leica Geosystems representative or from our website, www.leica-geosystems.com.

But there are more



Laser Plummets

Digital Levels

Illuminated Prisms

360 degree prism

Lockable Battery compartments

Total Station backpacks

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Which Leica Mining Product?

Mining Product	Under ground	Above Ground	Quarry
TPS300	■	■	■
TPS700	■	■	■
TPS1100	■	■	■
RCS1100	■	■	■
GPS500		■	■
GS50		■	
Dozer 2000		■	■
DISTO	■	■	■
Monitoring	■	■	■
APSWin	■	■	■

The application of these products in hazardous explosive areas or under extreme environment conditions has to be checked in advance with the local safety authorities and should be used in accordance with these local regulations and information contained in the product user manual.

TQM
ISO 9001 / ISO 14001

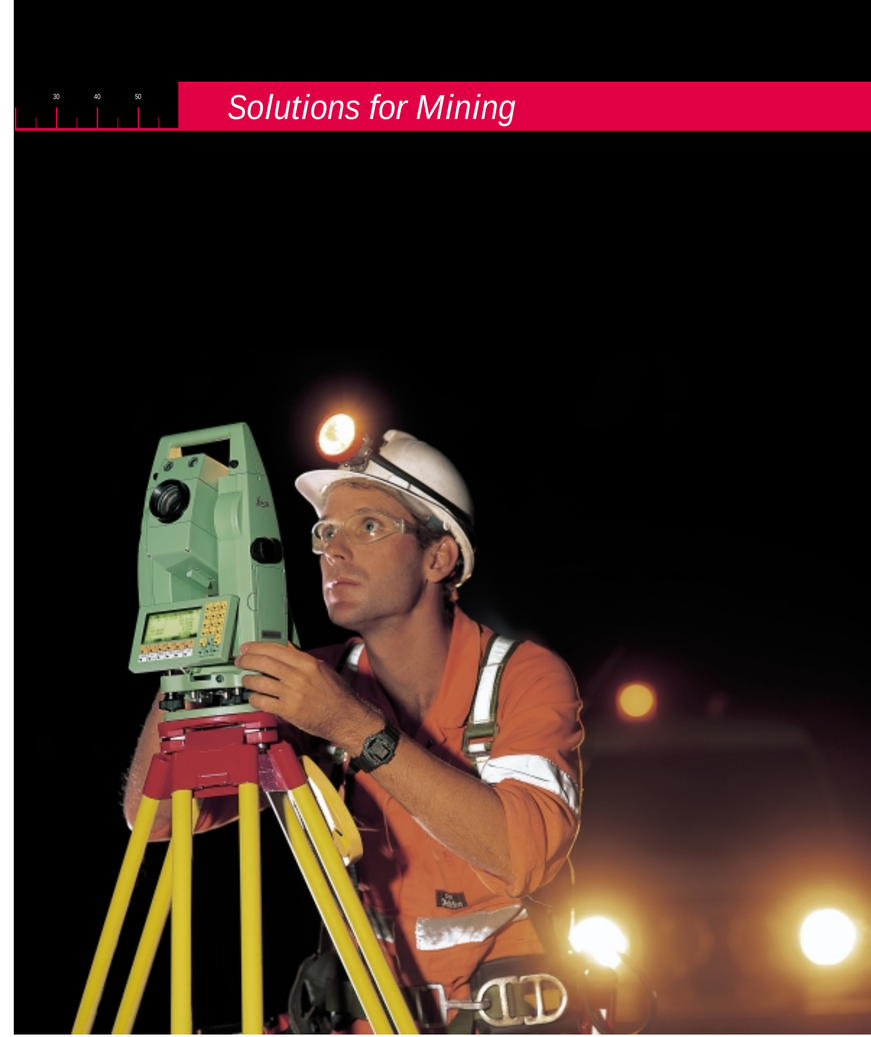
Total Quality Management –
Our commitment to total customer satisfaction.

Ask your local Leica Geosystems agent for more information about our TQM program.

Leica Geosystems

Leica Geosystems AG
CH-9435 Heerbrugg
(Switzerland)
Phone +41 71 727 31 31
Fax +41 71 727 46 73
www.leica-geosystems.com

Solutions for Mining



The Productivity you asked for...
From the Company you Trust

Leica Geosystems

GPS System 500

From the people who brought you the first GPS system specifically for surveying, Leica Geosystems offers the latest in world-class GPS technology – System 500.

System 500 is perfect for aboveground mining activities where access to GPS satellites is available. Small in size and lightweight it has a revolutionary design for outstanding performance in adverse conditions.

ClearTrak™ technology allows System 500 to obtain the very best signal reception, best satellite tracking, best jamming resistance and provide multipath mitigation. You will be amazed at your results. No more built-in obsolescence, only built-in cost effectiveness. The system can be upgraded as your needs change. Start with a GIS grade receiver and eventually upgrade to a full RTK system. Depending on the receiver chosen, System 500 can be used for drill hole stakeout, bench leveling, daily pick-ups, conveyor maintenance, monitoring or simply spot checks as you drive the mine.

Not all jobs in a mine require cm precision, and Leica Geosystems' GS50 GIS grade GPS receiver opens up many more possibilities for data collection. The LEICA GS50 is part of the System 500 family and as such uses the revolutionary ClearTrak™ technology providing the most precise code measurements in the industry. Tasks ranging from asset management, geological pickup to conveyor maintenance are perfectly suited to the LEICA GS50.

Dozer 2000

Leica Geosystems continues to lead the world with innovative solutions for today's mining tasks. The power of GPS technology is now being extended to machinery and Dozer 2000 is providing dramatic increases in productivity and minimizing rework when fitted to bulldozers and other earthmoving machinery for real-time machine guidance.

Dozer 2000 continuously displays the location and height of any machine relative to a given design surface, enabling the operator to move left or right, to cut or fill accordingly to within a few centimeters. The Dozer 2000 is ideal for a range of mining activities including reclamation, ripping, cleaning and uncovering coal, leveling the truck dump, construction of retention ponds, drainage and haul roads as well as dragline bench control.

TPS1100 Series

Whether you want a standard total station, reflectorless measurement, automatic target recognition or a fully robotic solution, the TPS1100 series provides an answer. In mining, versatility is paramount and the TCRA model, which combines all the technologies into one instrument provides this flexibility.

Safety around highwalls is crucial. The 360 degree prism is always facing the TCA instrument allowing the person carrying the prism to concentrate on his footing and surroundings. Want even more productivity! Automate the TCA1100 further, with the RCS1100 remote control unit. It replicates the TCA keyboard but gives you control from the prism and that extra independence.

TPS700 Series

For work where the full power of the TPS1100 series is not required but a full alpha-numeric keyboard is a must, the TPS700 series takes over.

The slim, lightweight design, camcorder batteries, laser plummet, endless drives and optional reflectorless measurements make this a useful surveying companion. Designed with certain mining situations in mind, the battery compartment can be locked, based on local mining regulations. A larger battery compartment can also be ordered, minimizing battery changes.

TPS300 Series

The instrument that revolutionized the industry! Breakthroughs in size, weight, cost and features have led to a series that was the first of its kind and still points the way ahead today.

Underground surveyors and mining engineers will love this small, lightweight total station with the option of reflectorless measurement. Either aim the visible red laser dot at the target or use the cross hairs – the choice is yours. Additionally, the TPS300 series has a large, onboard 4000-record memory, easy menu navigation using the arrow keys and a large, illuminated 8 line by 24 character display. Finish this off with the option to connect to an external recording device and the fact that it uses standard camcorder batteries and you have the perfect solution for many measuring tasks at a price that's right.

Onboard Application Programs

All TPS Instruments are delivered complete with a suite of standard application programs included.

Especially tailored to underground mining, the TPS300 series has available a mining application program to assist the user in performing new peg surveys, grade setting, offsetting or carrying out a backsight check. The TPS700 series adds the Refline application program for easy calculation of the orthogonal setting out elements of a point.

In addition to a wealth of continuously updated standard application programs, TPS1100 users also have the option to create their own using the LEICA Geobasic programming language.

The DISTO™ Family

When reliability and convenience is an issue on site, then the DISTO™ range of hand held measuring devices is what you need. The visible laser dot enables you to see exactly where you are measuring. Furthermore, all measurements are accurate to a few millimeters.

This one-person operation is perfect for measuring distances off the face, backs or the clearance of the hanging wall. In above ground mines, measure from the convenience of your vehicle to the face or check a setout by tie distance.

The DISTO classic is the latest in the DISTO range being capable of measuring 0.3m to 100m depending upon the target surface. This very small unit will fit into the palm of your hand measuring only 172mm in length.

If you need to record data, then the DISTO memo is the one for you with it's onboard memory for up to 1000 measurements and online RS232 interface. A number of third party software products that run on palm or laptop PCs are available.

Integrated graphical analysis

Monitoring Systems

Leica Geosystems' range of coaxial motorized automatic target recognition total stations makes your job of monitoring in any type of mining operation extremely cost effective. From basic systems using the onboard application program "Monitoring" to the more rigorous APSWin software, Leica has a solution to meet your needs.

APSWin is a computer-based system designed for measurement tasks that are repeated over time, regardless of the interval. Once you have taught the system where the points are located, it is then capable of automatic measuring, analysis, reporting and alarming. The system can be configured in many ways to suit the type of mine or task with data processing being carried out immediately at the measurement station or later in the office. APSWin systems are used successfully at some of the world's largest mines.